wherein the minimum effective proportion of at least gas component (B) of said mixture of gases is determined according to the criteria

$$B_c\%=K/e^{bMwt}+C$$

where B_c% (by vol.) is the total quantity of said gas component in the gas mixture, K, C and b are constants with values of 140, -10.8 and 0.012 respectively, M_{wt} represents a molecular weight of said component and is > 80, the total quantity of said component B_c being between 0.5 and 41% by vol., the balance of the mixture being another gas whose solubility in water is above 0.0283 and the molecular weight is below 80 daltons.

26. The method of claim 25, wherein the B_c component is a fluorine-containing biocompatible gas.

27. The method of claim 26, wherein the fluorine-containing as is SF_6.

28. The method of claim 26, wherein the fluorine-containing gas is CF_4.

29. The method of claim 26, wherein the fluorine-containing gas is C_2F_6.

30. The method of claim 26, wherein the fluorine-containing gas is C_3F_6.

31. The method of claim 26, wherein the fluorine-containing gas is C_3F_8.

32. The method of claim 26, wherein the fluorine-containing gas is C_4F_6.

33. The method agent of claim 26, wherein the fluorine-containing gas is C_4F_8.

34. The method of claim 26, wherein the fluorine-containing gas is C_4F_{10}.

35. The method of claim 26, wherein the fluorine-containing gas is C_5F_{10}.

36. The method of claim 26, wherein the fluorine-containing gas is C_5F_{12}.

37. The method of claim 25 or 26, wherein gas A is air.

38. The method of claim 25 or 26, wherein gas A is oxygen.

39. The method of claim 25 or 26, wherein gas A is nitrogen.

40. The method of claim 25 or 26, wherein gas A is carbon dioxide.

41. The method of claim 25, wherein the surfactants comprise at least one film forming surfactant present in laminar and/or lamellar form and, optionally, hydrophilic stabilizers.

42. The method of claim 41, wherein the film forming surfactant is a phospholipid.

43. The method of claim 42, wherein the phospholipid is a saturated phospholipid.

44. The method of claim 42, wherein the saturated phospholipid is selected from the group consisting of phosphatidic acid, phosphatidylcholine, phosphatidylethanolamine, phosphatidylserine, phosphatidylglycerol, phosphatidylinositol, cardiolipin, sphingomyelin and mixtures thereof.

45. The method of claim 42, wherein in addition to the phospholipid the aqueous carrier comprises copolymers of polyoxyethylene and polyoxypropylene, and glycerol.

46. The method of claim 26, wherein the surfactants are soy bean oil, and/or sorbitol.

47. A method of making an injectable ultrasound contrast agent comprising suspending in an aqueous medium gas filled microbubbles containing usual surfactants, additives and stabilizers, the microbubbles being bounded by a monolayer of saturated phospholipids in laminar or lamellar form, the microbubbles being filled with a gas mixture of at least two biocompatible gases A and B in which at least one gas (B) present in an amount of between 0.5-41% by volume has a molecular weight greater than 80

daltons and solubility in water below 0.0283 ml per ml of water at standard conditions, the balance of the mixture being gas A, wherein gases A and B are both gaseous at body temperature.

48. The method of claim 47, wherein gas (B) is a fluorine-containing biocompatible gas.

49. The method of claim 48, wherein the fluorine-containing gas is SF_6.

50. The method of claim 48, wherein the fluorine-containing biocompatible gas contains 1 to 5 carbon atoms.

51. The method of claim 48, wherein the fluorine-containing gas is CF_4.

52. The method of claim 48, wherein the fluorine-containing gas is C_2F_6.

53. The method of claim 48, wherein the fluorine-containing gas is C_3F_6.

54. The method of claim 48, wherein the fluorine-containing gas is C_3F_8.

55. The method of claim 48, wherein the fluorine-containing gas is C_4F_6.

56. The method of claim 48, wherein the fluorine-containing gas is C_4F_8.

57. The method of claim 48, wherein the fluorine-containing gas is C_4F_{10}.

58. The method of claim 48, wherein the fluorine-containing gas is C_5F_{10}.

59. The method of claim 48, wherein the fluorine-containing gas is C_5F_{12}.

60. The method of claim 47, wherein gas A is air.

61. The method of claim 47, 48 or 50, wherein gas A is oxygen.

62. The method of claim 47, 48 or 50, wherein gas A is nitrogen.

63. The method of claim 47, 48 or 50, wherein gas A is carbon dioxide.

64. The method of claim 47, wherein the aqueous carrier further contains hydrophilic stabilizers.

65. The method of claim 47, wherein the saturated phospholipid is selected from the group consisting of phosphatidic acid, phosphatidylcholine, phosphatidylethanolamine, phosphatidylserine, phosphatidylglycerol, phosphatidyl linositol, cardiolipin, sphingomyelin and mixtures thereof.

66. The method of claim 47, wherein in addition to the phospholipid the aqueous carrier comprises copolymers of polyoxyethylene and polyoxypropylene, and glycerol.

67. The method of claim 47, wherein the surfactants are soy bean oil and/or sorbitol.

68. The method of claim 49, wherein SF_6 is present in an amount of 25-41% by volume the balance being air.

69. The method of claim 56, wherein C_4F_8 is present in an amount of 10-41% by volume the balance being air.

70. The method of claim 69, wherein C_4F_8 is present in an amount of about 15% by volume the balance being air.

71. The method of claim 59, wherein C_5F_{12} is present in an amount of 2.9-4.5% by volume the balance being air.

72. The method of claim 47, wherein the fluorine-containing gas is a mixture of two or more fluorine containing gases.

73. The method of claim 72, wherein the mixture contains C_4F_8.

74. The method of claim 72, wherein the mixture contains CF_4.